

REMARKS

The Applicants respectfully request reconsideration of the present Application in view of the foregoing amendments and in view of the reasons that follow.

Status

This Reply and Amendment is intended to be completely responsive to the Non-Final Office Action dated March 24, 2009. Claims 1-44 were pending. Claims 1-25 and 33-34 are withdrawn. Claims 26-33 and 35-44 currently stand rejected. Claims 26-32 and 35-39 are currently being amended. Claim 43 is being canceled. New Claims 45-47 are being added.

Claim Objections

On page 2 of the Office Action, the Examiner objected to Claim 26. The Examiner stated "Claim 26 should end with a period." Claim 26 has been amended to end with a period.

The Applicants respectfully request withdrawal of this objection.

Claim Rejections – 35 U.S.C. § 112 ¶ 2

On page 2 of the Office Action, the Examiner rejected Claim 26 under 35 U.S.C. § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Examiner stated "[t]he phrase 'removing said inner wall element one of said molds' is unclear." Claim 26 has been amended to recite "removing said inner wall element from the molds."

The Applicants respectfully request withdrawal of the rejection of Claim 26 under 35 U.S.C. § 112 ¶ 2.

Claim Rejections – 35 U.S.C. § 102

On page 3 of the Office Action, the Examiner rejected Claims 35, 37, 38, 40, and 43 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,391,108 (“Albers”).

The Examiner stated that Albers discloses:

a drum comprising a first helical element (1); and a second helical element (2) joined to the first helical element, wherein the first and second helical elements form a substantially continuous layer circumferentially extending about a longitudinal axis of the drum (see Fig. 9).

Albers is directed to a metallic drum for a laundry processing machine for which “all welding work can be carried out from the outside” and that can be manufactured “from standard stock-held elements” (see col. 3, lines 33-37). Albers discloses that the drum is “constructed from individual elements joined to each other by weld seams, each element comprising an upper portion and a lower portion which can be welded together in the horizontal middle plane of the drum” (see col. 1, lines 46-50). Albers further discloses that “the upper portion 1 and the lower portion 2 [are] constructed from parts in stock . . . are mounted successively . . . and [then] welded . . . to the central pipe 16” (see col. 3, lines 9-11; see also col. 3, lines 20-22). Albers further discloses that “interior work inside the drum is dispensed with by these [construction] means” and “[a]ny nuisance due to welding gases and grinding dust also disappears” (see col. 3, lines 55-56; see also, col. 4, lines 3-5).

Independent Claim 35

Independent Claim 35 (as amended) recites a “concrete mixing drum” comprising, in combination with other elements, “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element, wherein the first helical wall element and the second helical wall element form a substantially continuous common wall circumferentially extending about a longitudinal axis to form an interior of the drum.” Claims 37, 38, and 40 depend from independent Claim 35.

Albers does not identically disclose a “concrete mixing drum” comprising, among other elements, “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element” as recited in independent Claim 35. In contrast, Albers discloses a welded, metallic laundry drum constructed from “standard stock-held elements” as described above.

Not only does Albers not disclose the “concrete mixing drum” comprising, in combination with other elements, “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element,” but also Albers does not teach, show, or suggest the “concrete mixing drum” recited in Independent Claim 35. In fact, Albers tends to teach away by focusing on improving metallic drums, whereas, the Applicants’ invention seeks to avoid the “problems associated with the use of steel mixing drums” by providing for “construction of a heavy duty vehicle mounted rotating or cement or concrete mixing drum fabricated from plastic materials” (see [0008], [0015]).

The Applicants respectfully submit that the rejection of Claim 35 over Albers has been overcome and that Claim 35 is patentable over Albers. Dependent Claims 37, 38, and 40, which depend from independent Claim 35, are also patentable. See 35 U.S.C. § 112 ¶ 4.

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The Applicants respectfully request withdrawal of the rejection of Claims 35, 37, 38, and 40 under 35 U.S.C. § 102(b).

Claim Rejections – 35 U.S.C. § 102

On pages 3-4 of the Office Action, the Examiner rejected Claims 35-41, 43 and 44 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,178,457 (“Helmy”).

The Examiner stated that Helmy discloses:

a mixing drum comprising a first helical element (for example, a first segment of 14, as seen in Fig. 1; see also col. 3, lines 35 “segmented”); and as second helical element (for example, a second segment of 14) joined to the first helical element, wherein the first helical element and the second helical are polymeric (see col. 2, lines 8 to 57).

Helmy is directed to a “mixer fin” that is “fixedly mounted on the inside wall 16 of drum 10” (see col. 3, lines 26-27). “Fin 14 is configured to have a relatively narrow tip or distal section 17 which merges with a relatively wider fin medial section 19, which itself broadens to base 21” (see col. 4, lines 10-13). “By means of bolts 22, and an interior metallic base plate 24, fin 14 is affixed to the inside face 16 of drum 10” (see col. 4, lines 13-15). “The bulk material 26 of drum 10 into which fin 14 is bolted normally comprises a substantially rigid material such as metal” (see col. 4, lines 16-18).

Independent Claim 35

Independent Claim 35 (as amended) recites a “concrete mixing drum” comprising, in combination with other elements, “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element, wherein the first helical wall element and the second helical wall element form a substantially continuous common wall circumferentially extending about a longitudinal axis to form an interior of the drum.” Claims 36-41 depend from independent Claim 35.

Helmy does not identically disclose a “concrete mixing drum” comprising “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element, wherein the first helical wall element and the second helical wall element form a substantially continuous common wall circumferentially extending about a longitudinal axis to form an interior of the drum” as recited in independent Claim 35. In contrast, Helmy discloses a “mixing fin 14” that is “fixedly

mounted on the inside wall 16 of drum 10,” (see col. 3, lines 26-27). Fin 14 does not itself form the inside wall 16 of drum 10, but, rather, is affixed thereto “[b]y means of bolts 22, and an interior metallic base plate 24” (see col. 4, lines 13-14).

Not only does Helmy not disclose the “concrete mixing drum” comprising “a first molded non-metallic helical wall element; and a second molded non-metallic helical wall element joined to the first molded non-metallic helical wall element, wherein the first helical wall element and the second wall helical element form a substantially continuous common wall circumferentially extending about a longitudinal axis to form an interior of the drum,” but also Helmy does not teach, show, or suggest the “concrete mixing drum” recited in Independent Claim 35. In fact, Helmy teaches away from using a non-metallic interior for the drum, as claimed by the Applicants. Helmy teaches that:

[o]ne approach to the problem of reducing wear in a rotary mixer is to line it or coat it with a suitable material . . . for example, a polyurethane and rubber. Another approach has been to use a polymeric material such as polyurethane, the polymer having dispersed therewithin, a wear-resistant material. . . . One of the problems with utilization of coatings, as described above, is that when the coatings become worn the underlying substrate, which is usually metal, then is exposed to the abrasive, often corrosive material being mixed. Further, once the polymeric coating has been perforated, the ability of the abrasive material to erode the somewhat more abrasive material to erode the somewhat more abrasion susceptible material thereunder is enhanced. . . . The problems encountered in employing a coated-interior rotary or rotatable drum mixer is particularly acute for mixing fins deployed within such rotary drums.

See col. 1, lines 22-29, 32-44.

The Applicants respectfully submit that the rejection of Claim 35 over Helmy has been overcome and that Claim 35 is patentable over Helmy. Dependent Claims 36-41, which depend from independent Claim 35, are also patentable. See 35 U.S.C. § 112 ¶ 4.

Independent Claim 44

Independent Claim 44 recites “an element” comprising, “a helical polymeric shell; and a polymeric blade integrally formed with and extending from the shell.”

Helmy does not identically disclose “an element” comprising, “a helical polymeric shell; and a polymeric blade integrally formed with and extending from the shell.” In contrast, Helmy discloses a “mixing fin 14” that is “fixedly mounted on the inside wall 16 of drum 10,” (see col. 3, lines 26-27). Helmy also discloses that the fin may be mounted “[b]y means of bolts” and the “drum 10 into which fin 14 is bolted normally comprises a substantially rigid material such as metal” (see col. 4, lines 13, 17-18). Further, Helmy teaches away from the use of non-metallic interior of the drum, as described with reference to Claim 35. This is particularly significant in that the Applicants teach a polymeric drum having “blades 28 are strengthened by their molding integrally with the wall 26” [0138].

The Applicants respectfully submit that the rejection of Claim 44 over Helmy has been overcome and that Claim 44 is patentable over Helmy. Dependent Claims 45-47, which depend from independent Claim 44, are also patentable. See 35 U.S.C. § 112 ¶ 4.

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The Applicants respectfully request withdrawal of the rejection of Claims 35-41 and 44 under 35 U.S.C. § 102(b).

Claim Rejections – 35 U.S.C. § 103(a)

On page 4 of the Office Action, the Examiner rejected Claim 42 as being obvious over U.S. Patent No. 5,178,457 (“Helmy”) in view of WO 01/26,871 (“Rodgers”) under 35 U.S.C. § 103(a).

The Examiner stated that Helmy does not disclose:

The second layer . . . to be a fiber reinforced elastomer.

The Examiner stated that Rodgers:

teaches make in a drum layer of fiber reinforced elastomer (see page 8, lines 8-15). It would have been obvious to one of ordinary skill in the art to have made the layer of fiber reinforce elastomer to prolong life and reduce weight as taught by Rodgers at page 5, lines 4-11.]

Claim 42 depends from independent Claim 35. The Applicants respectfully submit that independent Claim 35 (as amended) is patentable, and, accordingly, Claim 42 is also patentable. See 35 U.S.C. § 112 ¶ 4.

In addition, Claim 42 recites “a drum” comprising, in combination with other elements “a second substantially continuous layer [that] is a fibre reinforced elastomer.” This layer “extend[s] across a junction of the first element and the second element,” as recited in Claim 41, from which Claim 42 depends. Further, the first element and the second element are “molded non-metallic helical wall element[s] that] . . . form a substantially continuous common wall circumferentially extending about a longitudinal axis to form an interior of the drum” as recited in Independent Claim 35, from which Claim 42 also depends.

Helmy is directed to a “mixer fin” that is “fixedly mounted on the inside wall 16 of drum 10” (see col. 3, lines 26-27). “Fin 14 is configured to have a relatively narrow tip or distal section 17 which merges with a relatively wider fin medial section 19, which itself broadens to base 21” (see col. 4, lines 10-13). “By means of bolts 22, and an interior metallic base plate 24, fin 14 is affixed to the inside face 16 of drum 10” (see col. 4, lines 13-15). “The bulk material 26 of drum 10 into which fin 14 is bolted normally comprises a substantially rigid material such as metal” (see col. 4, lines 16-18).

Rodgers is directed to a “vehicle mounted rotating cement or concrete mixing drum fabricated from plastics” where an inner wall of the drum is formed from three separate non-helical segments (shown in FIGS. 3-4 as elements 13, 14, 15).

The “second substantially continuous layer [of] fibre reinforced elastomer” recited in Claim 42, that “extend[s] across a junction of” the “molded non-metallic” helical first and second wall elements as recited in Claims 41 and 35, from which Claim 42 depends, would not have been obvious in view of Helmy, alone or in any proper combination with Rodgers under 35 U.S.C. § 103(a). Helmy alone or in any proper combination with Rodgers does not disclose, teach, or suggest a “second continuous layer [of] fibre reinforced elastomer” comprising, in combination with other steps, the second continuous layer “extending across a junction of” a “molded, non-metallic helical first wall element” and a “molded, non-metallic helical second wall element” as recited in Claims 41 and 35, from which Claim 42 depends. To transform the drum of Helmy and the “fiber reinforced composite layer” of Rodgers into the “second substantially continuous layer [of] fibre reinforced elastomer” recited in Claim 42, that “extend[s] across a junction of” the “molded non-metallic” helical first and second wall elements as recited in Claims 41 and 35, from which Claim 42 depends, would require still further modification, and such modification is taught only by the Applicants’ own disclosure.

In fact, Rodgers teaches away from Helmy. Rodgers recites a “mixing drum fabricated from plastics materials which not only improves the concrete mixing characteristics but prolongs the life of the drum in comparison to its steel equivalent and allows and increase in concrete carrying capacity of the drum commensurate with the reduction in drum dead weight” (page 5, lines). In contrast, Helmy recites a metallic drum providing for a fin to be “anchored or mounted” thereto (see col. 3, lines 37-39).

Further, the Applicants respectfully submit that it would not have been obvious “to one of ordinary skill [in the art] to have made the layer of fiber reinforce elastomer to prolong life and reduce weight” as Examiner states on page 4 because the drum of Helmy, unlike the drum of Rodgers, is metallic and would receive little to no reinforcing benefit from fiber reinforcing elastomer second layer. Indeed, it would be undesirable for the drum of Helmy to include a fiber reinforcing elastomer second layer that adds weight while providing little to no reinforcing benefit .

The Applicants respectfully submit that Claim 42, considered as a whole, would not have been obvious in view of Helmy and/or Rodgers. The Applicants further respectfully submit that the rejection of Claim 42 over Helmy in view of Rodgers under 35 U.S.C. § 103(a) is overcome and that Claim 42 is patentable over Helmy in view of Rodgers.

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The Applicants respectfully request withdrawal of the rejection of Claim 42 under 35 U.S.C. § 103(a).

Claim Rejections – 35 U.S.C. § 102(b) or in the alternative § 103(a)

On pages 4-5 of the Office Action, the Examiner rejected Claims 26-32 as being anticipated by, or, in the alternative, obvious over WO 01/26871 (“Rodgers”) under 35 U.S.C. § 102(b) and § 103(a).

The Examiner stated that Rodgers discloses:

a vehicle mounted rotor concrete mixing drum (8) having an opening (9) at one end for receiving and/or discharged of concrete therefrom and at the other end, means for engaging a drive assembly so as to rotate the drum for mixing or discharging concrete (see page 28, line 5-10); wherein, the drum is manufactured from at least one mould using at least one plastic material; wherein the drum further includes integrally attached vanes (24) which outstand from the internal surface of the drum forming an archimedian spiral disposed such that when the drum is rotated in a first direction the concrete contents are mixed and when the drum is rotated in a second direction, the contents are discharged from said drum.

The Examiner further noted that:

‘The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature.’ *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974).

The Applicants respectfully point out that Claims 26-32 have been amended to recite method claims. Accordingly, the lesser burden of proof for product-by-process claims is no longer applicable to independent Claims 26 and 27 and corresponding dependent Claims 28-32.

Rodgers is directed to a “vehicle mounted rotating cement or concrete mixing drum fabricated from plastics” where an inner wall of the drum is formed from three separate non-helical segments (shown in FIGS. 3-4 as elements 13, 14, 15).

Independent Claim 26

Independent Claim 26 (as amended) recites a “method of making an interior wall element for a vehicle mounted rotary concrete mixing drum” comprising, in combination with other steps, “preparing a first generally helical inner mold part containing a surface extending

between first and second helical edges” and “injecting a polyurethane elastomer into a cavity defined by said inner mold assembly and the outer mould assembly to form an inner wall element comprising one half of an interior wall of the mixer and one helical blade.”

Rodgers does not identically disclose a “method of making an interior wall element for a vehicle mounted rotary concrete mixing drum” comprising, in combination with other steps, “preparing a first generally helical inner mold part containing a surface extending between first and second helical edges” and “injecting a polyurethane elastomer into a cavity defined by said inner mold assembly and the outer mould assembly to form an inner wall element comprising one half of an interior wall of the mixer and one helical blade.” In contrast, the mold of Rodgers is not helical, but, rather, “includes helical grooves” (see page 12, lines 15-17; see also, FIGS. 17a-17o). Further, the drum of Rodgers is formed from three non-helical segments, not a “helical inner mold part” as claimed by the Applicants (see FIGS. 3-4 as elements 13, 14, 15).

Not only does Rodgers does not identically disclose, the method of Claim 26, but also this method would not have been obvious in view of Rodgers under 35 U.S.C. § 103(a). Rodgers does not disclose, teach or suggest a “method of making an interior wall element for a vehicle mounted rotary concrete mixing drum of the type having an opening at one end for receiving and/or discharge of concrete therefrom and at the other end” comprising, in combination with other steps, “preparing a first generally helical inner mold part containing a surface extending between first and second helical edges” and “injecting a polyurethane elastomer into a cavity defined by said inner mold assembly and the outer mould assembly to form an inner wall element comprising one half of an interior wall of the mixer and one helical blade.” Rodgers would require still further modification to disclose, teach or suggest the method claimed by the Applicants. Such modification is taught only by the Applicant’s own disclosure.

The Applicants respectfully submit that the rejection of Claim 26 over Rodgers as being anticipated by, or, in the alternative, obvious over WO 01/26871 (“Rodgers”) under 35 U.S.C. § 102(b) and § 103(a) is overcome and that Claim 26 is patentable over Rodgers.

Independent Claim 27:

Claim 27 (as amended) recites a “method of making a vehicle mounted concrete mixing drum” comprising, in combination with other steps, “injecting a flowable material into a space formed between said inner mould and said outer mould such that the flowable material forms a helical element which will form at least part of an inner surface of said drum” and “removing the helical element from said inner mould” and “repeating steps a) - e) so as to form a second helical element” and “joining the first helical element and the second helical element to form a common interior wall of the drum”. Claims 28-32 depend from independent Claim 27.

Rodgers does not identically disclose a “method of making a vehicle mounted concrete mixing drum” comprising, in combination with other steps, “injecting a flowable material into a space formed between said inner mould and said outer mould such that the flowable material forms a helical element which will form at least part of an inner surface of said drum” and “removing the helical element from said inner mould” and “repeating steps a) - e) so as to form a second helical element” and “joining the first helical element and the second helical element to form a common interior wall of the drum.” In contrast, the mold of Rodgers is not helical, but, rather, “includes helical grooves” (see page 12, lines 15-17; see also, FIGS. 17a-17o). Further, the drum of Rodgers is formed from three non-helical segments, not a first molded helical element joined to a second molded helical element as disclosed by the Applicants (see FIGS. 3-4 as elements 13, 14, 15).

Not only does Rodgers does not identically disclose, the method of Claim 27, but also this method would not have been obvious in view of Rodgers under 35 U.S.C. § 103(a). Rodgers does not disclose, teach or suggest a method of making a vehicle mounted concrete mixing drum” comprising, in combination with other steps, “injecting a flowable material into a space formed between said inner mould and said outer mould such that the flowable material forms a helical element which will form at least part of an inner surface of said drum” and “removing the helical element from said inner mould” and “repeating steps a) - e) so as to form a second helical element” and “joining the first helical element and the second helical element to

form a common interior wall of the drum.” Rodgers would require still further modification to disclose, teach or suggest the method claimed by the Applicants. Such modification is taught only by the Applicants’ own disclosure.

The Applicants respectfully submit that the rejection of Claim 27 over Rodgers as being anticipated by, or, in the alternative, obvious over WO 01/26871 (“Rodgers”) under 35 U.S.C. § 102(b) and § 103(a) is overcome and that Claim 27 is patentable over Rodgers. Dependent Claims 28-32, which depend from independent Claim 27, are also patentable. See 35 U.S.C. § 112 ¶ 4.

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The Applicants respectfully request withdrawal of the rejection of Claims 26-32 under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).

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The Applicants respectfully request withdrawal of the rejections of Claims 26-32, 35-42, and 44 under 35 U.S.C. § 102(b) and/or 35 U.S.C. § 103(a).

The Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.


The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, the Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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